

GAO

United States General Accounting Office

Report to Congressional Requesters

May 1996

AMMUNITION INDUSTRIAL BASE

Information on DOD's Assessment of Requirements



DOD-96-0612-000
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19960612 000

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GAO/NSIAD-96-0612

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-271468

May 31, 1996

The Honorable Herbert H. Bateman
Chairman, Subcommittee on Military Readiness
The Honorable Duncan Hunter
Chairman, Subcommittee on Military Procurement
Committee on National Security
House of Representatives

In March 1995, you asked us to review the production facilities available to support the military's ammunition requirements and the status of the ammunition stockpile. This report addresses your concerns about industrial base production facilities. Our review focused on the Department of Defense's (DOD) assessment of the industrial base's ability to supply ammunition to meet requirements for peacetime and for two major regional conflicts and to replenish the ammunition stockpile following those conflicts. We are issuing a separate report addressing your concerns about the status of the ammunition stockpile.¹

Results in Brief

According to DOD, the ammunition stockpile, which is to meet peacetime needs and support two major regional conflicts, has no major shortages due to the industrial base. However, there is no longer a requirement to surge the industrial base during conflicts. In addition, the most lethal, up-to-date, "preferred" munitions will be at a premium; some requisitions will be filled with older "substitute" ammunition items, but these items are considered adequate by DOD to defeat the threat that U.S. forces are expected to encounter.

DOD's position is based on a number of studies, including its 1994 and 1995 financial viability studies of the firms comprising the ammunition industrial base, which concluded that the base is adequate to meet DOD's continued production and replenishment requirements. DOD is confident in this position, even though it did not receive sufficient data to evaluate the financial condition of all the firms in the industrial base. Although the firms were not obligated to respond, the 57 firms that responded, and which were fully evaluated in the 1994 study, held about 75 percent of the production capacity in the industrial base. DOD assumed that the remaining 45 firms that did not respond were financially viable. DOD officials stated that if the firms were having financial difficulties, they would be motivated

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¹Defense Ammunition: Significant Problems Left Unattended Will Get Worse (GAO/NSIAD-96-129, expected to be issued in June 1996).

to respond. In their opinion, it would be in a firm's best interests to respond if it was having financial difficulties because that response would, in effect, be a request for DOD to help the firm remain viable.

An assessment of whether the ammunition industrial base is adequate for replenishment depends on the assumptions used. Because the underlying assumptions concerning replenishment levels and time frames form the basis of the services' ammunition requirements, changes to the Defense Planning Guidance could cause DOD's industrial base assessment to change even if production capacity within the industrial base remains stable. The sensitivity of the assessment to changes in assumptions is illustrated by other private studies that have concluded that the industrial base is inadequate to meet replenishment requirements during and following a national emergency. Those studies are based on underlying assumptions that differ considerably from the assumptions in the current Defense Planning Guidance.

Background

The Army is DOD's single manager for the military services' conventional ammunition and is responsible for ensuring that an adequate industrial base is maintained to meet the services' ammunition requirements. The conventional ammunition requirements include about 250 end items and 500 components that are grouped into 14 different families. These requirements are derived by adding the projected training, testing, and pipeline requirements to the war reserve requirement that is needed for combat. Since Operation Desert Storm, ammunition requirements have decreased substantially, and the reduced threat and changing conflict scenarios caused war reserve requirements to decline by more than 70 percent between 1992 and 1994.

In the past 20 years, DOD's ammunition planning strategy has changed dramatically.

- Before July 1976, the services stocked enough items to support combat consumption from the day military operations begin to when the production rate for an item equals combat consumption.
- Beginning in July 1976, the services were to stock enough items to meet the first 6 months of combat consumption and the industrial base was assumed to be able to take over supply at that time. If industry could respond before the sixth month, then reserve item requirements were to be reduced accordingly. However, if industry could not respond by the

sixth month, industrial preparedness actions necessary to make such a response possible were to be identified for funding.

- The 1978 Program Objective Memorandum (POM) guidance allowed sizing of the industrial base to meet total mobilization requirements.
- The 1979 POM guidance reduced the allowable size of new facilities to essentially that required to support an 180-day requirement.
- The 1980 POM guidance further reduced allowable sizing to a 90-day requirement. This guidance was interpreted to limit sizing of new facilities in support of new munitions to that which would support production for the Five-Year Defense Plan. This guidance began the movement away from surge planning.

After the collapse of the former Soviet Union and the end of the Cold War, requirements dropped again. As the prospects for a long drawn out global war declined, DOD continued to reduce its ammunition requirements. Surge involved emphasis on expediting the completion of items already in process rather than sustaining production because its only purpose was to preclude serious depletion of war reserve stocks in a short, intense war. The emphasis had shifted away from huge stockpiles and an industrial base with a large surge capacity to a "come as you are" philosophy. Stockpile requirements declined as DOD planned primarily for major regional conflicts rather than a global war. Surge capacity lost its importance because the conflicts were assumed to be so short in duration that a surging base would not be able to make a significant difference. The key measurement of the health of the industrial base became the length of time required to replenish the stockpile after two major regional conflicts.

DOD's war reserve requirements are now based on the need to fight two nearly simultaneous major regional conflicts. Key assumptions in this new plan are (1) each conflict will be intense and short in duration (60 to 120 days); (2) the military will rely on existing stocks for the entire duration of the conflicts; (3) there will not be a significant surge in ammunition production during the conflicts; and (4) following the conflicts, ammunition items will be replenished to a designated level within a specified time frame, to prepare for the next conflict. Using the two-conflict scenario, the military services compute war reserve requirements based on target kill data from computer simulation models and from logistics distribution figures.

After the Cold War, the Army Materiel Command studied the services' ammunition industrial base needs in light of the diminished threat that had led to force reductions and reduced ammunition requirements. In

April 1991, the study results were published, and the Command concluded that the base needed to be consolidated and reduced in size. The Army used this study to develop its ammunition facility strategy for the 21st century (AMMO-FAST-21), a strategy that supports reduced peacetime ammunition requirements while maintaining the highest level of readiness possible for future contingency operations.

In August 1993, an independent study team from the American Defense Preparedness Association—two retired military officers and four corporate managers with more than 30 years experience dealing with ammunition—endorsed the Army's AMMO-FAST-21 strategy. The strategy prioritizes ammunition item families and identifies the facilities that provide the most production flexibility. It attempts to minimize expenditures by reshaping the industrial base to its minimum essential size. Redundancy within the base is limited, and excess government facilities are disposed of or leased to commercial firms. AMMO-FAST-21 also attempts to preserve the balance between government and commercial facilities and to maintain the critical equipment, processes, and skilled personnel at both types of facilities. The strategy is being implemented through government-owned, group technology centers and specified mission facilities and through commercial facilities. AMMO-FAST-21 established a restricted specified base of privately owned facilities that DOD can contract with directly for critical items and components.

The ammunition industrial base has experienced a dramatic drop in its production capacities. The relative percentages of ammunition procurement dollars going to government and commercial producers, however, have remained relatively constant since 1987. In addition, recent closures of production facilities have closely reflected those projected by the Army when it submitted its 1991 Production Base Planning Study and 1993 update to Congress.

DOD's primary means of maintaining the industrial base is through the direct procurement of hardware—ammunition end items and components—but it also procures services for the layaway of production facilities, the maintenance of inactive facilities, and the demilitarization of ammunition. This report uses the term procurement funding to refer to the procurement of ammunition end items and components only.

Current Status of the Industrial Base

The ammunition industrial base has experienced dramatic changes over the last 17 years. Less than 50 percent of the production facilities that

existed in 1978 still exist today, and production capacity is declining for all 14 families of ammunition. However, the mix of procurement funding between government-owned and contractor-owned production facilities has remained relatively stable since 1987, with contractor-owned facilities receiving about 65 percent of the funding.

AMMO-FAST-21 Is Proceeding as Planned

Decreased funding has led to reductions and consolidations in both the government and private sectors of the industrial base. As shown in table 1, the numbers of government-owned, government-operated (GOGO); government-owned, contractor-operated (GOCO); and contractor-owned, contractor-operated (COCO) ammunition plants have all declined significantly since 1978. There also has been a corresponding decline in the commercial subcontractors that supply parts to the ammunition industry.

Table 1: Decline in Active Ammunition Production Facilities

Facilities	1978	1995	Decline (percentage)
GOGOs	6	3	50
GOCOs	26	6 ^a	77
COCOs	286	52	82

^aIn addition to the 6 active facilities, there are 10 inactive facilities that are laid away to meet replenishment requirements after a major regional conflict.

As table 1 shows, commercially operated production facilities have experienced more closures than government-operated production facilities. However, the closures closely reflect those projected by the Army when it submitted its 1991 Production Base Planning Study and 1993 update to Congress.

Production Capabilities Have Declined

Since the end of Operation Desert Storm, ammunition production capacity in the United States has steadily declined. According to both military and industry projections, this trend will continue for several more years before capacity stabilizes within a smaller industrial base. In fiscal year 1990, the Army did production planning for 329 end items that were not commercially available. By fiscal year 1995, the number had dropped to 163.

Indirect fire munitions are used to suppress enemy fire in addition to killing targets and have historically constituted a larger portion of the war reserve inventory than direct fire munitions. Indirect fire munitions continue to make up the largest portion of the war reserve inventory, but as the war reserve requirements have decreased (from 2,500,000 short tons in 1992 to 650,000 short tons in 1994), the percentage of direct fire ammunition has increased. The indirect fire portion of the ammunition stockpile is likely to continue its decline. Table 2 shows production capacity for indirect fire systems, such as artillery,² is declining much faster than production capacity for direct fire systems, such as tanks.

Table 2: Capacity Analysis for the 14 Ammunition Families

Ammunition families	Quantity per month		
	Fiscal year 1992	Fiscal year 2001 projections	Percent change
Small caliber	476,000,000	165,000,000	-65
Fuze	35,700,000	20,000,000	-44
Cannon caliber	18,600,000	8,100,000	-56
Grenade, mine, and demolition charge	7,400,000	6,800,000	-8
Propelling charge	5,300,000	300,000	-94
Pyrotechnic	2,000,000	500,000	-75
Mortar	3,000,000	1,100,000	-63
Artillery	953,000	151,000	-84
Tank	136,000	104,000	-24
Rocket	136,000	135,000	-1
Scatterable mine	152,000	33,000	-78
Navy gun	86,000	60,000	-30
Dispenser	15,000	6,000	-60
Bomb	36,000	25,000	-31

Source: The Army's March 10, 1995, Conventional Ammunition Functional Area Analysis.

Mix of Funding for Government and Private Facilities Remains Steady

The ammunition industrial base has downsized considerably since 1987 as a result of significant reductions in ammunition procurement funding (from about \$4 billion in fiscal year 1986 to about \$1.2 billion in fiscal year 1996). However, the funding split between government-owned and contractor-owned facilities has remained fairly steady over these years. In fiscal year 1987, government-owned facilities received 35 percent of the

²See our report entitled Industrial Base: Inventory and Requirements for Artillery Projectiles (GAO/NSIAD-95-89, Mar. 20, 1995).

procurement funding and contractor-owned facilities received the remaining 65 percent. In fiscal year 1994, the numbers were 32 percent and 68 percent, respectively (see table 3). DOD considers these percentages "very reasonable" and expects them to remain steady in the future. Likewise, in its May 1994 Conventional Munitions Assessment Report, the Munitions Industrial Base Task Force³ stated that "the public/private mix of production work is approximately correct."

Table 3: Ammunition Procurement Funding for Government-Owned and Contractor-Owned Production Facilities

Year	GOGO/GOCO ^a percentage	COCO ^b percentage
1987	35	65
1988	31	69
1989	35	65
1990	35	65
1991	32	68
1992	42	58
1993	40	60
1994	32	68
1995 (partial data)	37	63
1987-94 average	35	65

^aGOGO and GOCO plants are generally responsible for hazardous operations, such as manufacturing explosives and final loading, assembling, and packing of ammunition. Loading and packing are performed only at government-owned plants for 9 of the 14 ammunition families. For the other five families, loading and packing are performed at both government and commercial plants.

^bCOCO plants generally produce nonlethal ammunition components or subsystems such as metal parts, electronics, plastics, and composites. Although GOCO plants also manufacture major components for all 14 ammunition families, GOGO plants produce major components for only 3 ammunition families.

In commenting on this report, DOD noted that the distinction between GOCO and coco facilities is blurring as the government leases inactive facilities to commercial contractors.

Industrial Base Considered Adequate to Satisfy Defense Planning Guidance

The key role of the ammunition industrial base is to replenish the ammunition stockpile. In peacetime, the industrial base replenishes ammunition that is used for military training and testing. It also makes up shortages of war reserve items and supplies new types of ammunition to the stockpile. Since the major regional conflicts envisioned in the Defense Planning Guidance are short in duration, the ammunition industrial base is

³This task force is a coalition of the leading commercial firms in the ammunition industrial base.

not required to surge during the conflicts. However, according to the Defense Planning Guidance, the key measure of the health of the base is its ability to replenish the stockpile following two major regional conflicts.

**Downsizing Has Not
Caused Any Serious
Peacetime Shortages**

While the services have shortages of many ammunition items, very few of these shortages appear to be due to inadequate production capacity. We discussed a random sample of 152 of the 752 items that had shortages with service officials to determine whether these shortages were attributable to industrial base problems. In addition, we asked them if they knew of any additional items that had shortages due to industrial base problems.

None of the 152 items had shortages that service officials considered attributable to industrial base problems. However, Army officials identified three other items as having shortages attributable to industrial base issues, and Marine Corps officials identified four items. Most of these shortages appear to be minor and can be quickly corrected in an emergency by using substitute munitions or increasing production rates. Most ammunition production lines currently operate for one or two 8-hour shifts per day, 5 days per week. These production lines could run three shifts per day, 5 days per week, but worker fatigue and required maintenance of the equipment would prevent long-term continuous operation of the production lines.

The first item with an industrial base-related shortage is the 155-mm Copperhead projectile. According to DOD, the supplier base and the technical ability to manufacture Copperhead parts have disappeared. Several years ago, military industrial base planners decided not to maintain a production capacity for the Copperhead because the round is expensive, requirements are low, the cost of maintaining a production line in layaway status would be prohibitive, and there are substitute items being developed. One substitute is the 155-mm Sense and Destroy Armor projectile, currently in low-rate initial production.

The second and third items are the M58A3 and M59 mine clearing charges. These shortages result from an inadequate supply of the C-4 explosive that is used in the charges. Because C-4 is used in four other types of ammunition that require about 1 pound of C-4 for each round and the mine clearing charges require about 500 pounds of C-4 for each charge, the Army has allocated the available C-4 to the four other types of ammunition. The Army has no plans to increase C-4 production capacity because of cost. However, if an emergency arises, substitute explosives

can be produced, and the Army can increase its production of C-4 by adding shifts to its current production line or it can use the C-4 from the other ammunition items.

The fourth item is the 120-mm M830A1 high explosive antitank round, which is used by both the Army and the Marine Corps. The Army is planning one more procurement for this round and will layaway the production line after that procurement because it will have an adequate supply of the ammunition. However, the Marine Corps currently has a shortage of M830A1 rounds and is not scheduled to procure any more of them due to funding priorities. According to the Army, the production line for this round will be inactive after its final procurement, but the Army will still be able to produce this ammunition on short notice for the next 2 years. A quick production response is possible because the 120-mm tank training rounds and the M829A2 kinetic energy round will remain in active production through fiscal year 1998. In commenting on this report, DOD said without future buys, the entire tank ammunition base would be jeopardized, not just the M830A1 rounds.

The fifth item is the 81-mm infrared illumination round. The manufacturer that developed this item declined further orders after supplying the Army with a quantity sufficient for a year. The Army is working toward establishing a production capability for this item at Crane Army Ammunition Activity, and it plans to load, assemble, and pack the round at Pine Bluff Arsenal.

The last two items are the M821 and M889 81-mm high explosive mortar rounds. At the time of our review, the production line for these two rounds was shut down while engineers corrected a problem with the propellant charge. In addition, an engineering change proposal was pending that could delay production. However, according to Army officials, a fully automated production line that is presently in layaway status could be restarted if necessary.

No Industrial Base Problems to Prevent Fighting Two Major Regional Conflicts or Replenishing the Stockpile

When we discussed the ammunition shortages caused by industrial base problems with service officials and reviewed DOD's industrial base studies, we did not identify any industrial base problems that would keep the military from fighting two major regional conflicts, as required by the current Defense Planning Guidance, or from replenishing the stockpile. However, ammunition shortages that result from funding problems will not be filled by a surging industrial base because the current guidance

does not require the base to have a surge capability, as in the past. DOD officials stated that shortages of preferred munitions will be likely if two major regional conflicts arise and that shortages will be met with substitute munitions. This substitution is in accordance with the current Defense Planning Guidance.

Army officials stated that although the industrial base is able to meet the replenishment requirements following a major regional conflict, replenishment is likely to be costly. Because production facilities for new items are being built for efficient production at peacetime requirement levels, funds will be required to expand some of these facilities to meet replenishment requirements.

DOD's Financial Viability Studies of Industrial Base Firms

DOD's assessment of the adequacy of the industrial base is based on the results of several studies, the annual functional area analysis, and ongoing production planning efforts, including the single manager's June 1995 Production Base Plan. Two of the key studies were DOD's 1994 and 1995 studies that attempted to evaluate the financial viability of all the firms comprising the industrial base. Although DOD did not receive responses from all the firms in the base, between the two studies it captured adequate financial data for the firms holding most of the base's production capacity. From the data, DOD concluded that the industrial base was adequate to meet the services' ammunition requirements.

In 1994, DOD attempted to evaluate the financial status of 102 key commercial producers⁴ and assess their projected financial viability during the 1995 through 1997 time frame based on the firms' profitability in 1992 and DOD's planned future ammunition spending. DOD obtained some financial data for about 80 firms but received enough financial data to perform break-even analyses for only 57 companies. The 57 firms that were fully evaluated held about 75 percent of the production capacity in the ammunition industrial base, according to Army officials. DOD assumed that the remaining 45 firms were financially viable, even though it did not have enough financial data to perform break-even analyses. While the validity of this assumption is open to question, it is important to note that

⁴According to the DOD study, the ammunition sector was composed of 105 major producers (including 3 GOGO plants) and a large number of supporting commodity suppliers. Nine of the 102 commercial producers manufactured ammunition or parts in government-owned facilities, while the remainder produced ammunition or parts in commercial facilities.

DOD could not compel the firms to provide the requested information and none of the 45 firms were single or sole source producers.⁵

DOD's break-even analyses revealed that 16 of the 57 firms needed more detailed evaluations, based on their projected financial viability for 1995 through 1997. After further evaluation, DOD found that the production capabilities of most of the 16 firms could be absorbed by the remaining producers within the ammunition sector. However, three of the firms were single source producers. DOD concluded that if these three firms went out of business, their production capabilities could not be absorbed by the remaining producers within the ammunition sector. Therefore, DOD is continuing to monitor these firms to ensure it retains its necessary production capacity.

In 1995, at the urging of the Munitions Industrial Base Task Force, DOD conducted another financial viability study of the ammunition industrial base. This study was broader in scope than the 1994 study, covering 154 firms that the task force had identified as part of the industrial base. DOD sent out surveys requesting financial data to all 154 firms, but only 29 firms responded in a timely manner.⁶ DOD officials attributed this low response rate to two reasons. First, DOD did not pay the contractors for this information. Second, many of the contractors had provided the same information the year before, for DOD's 1994 study. Once again, DOD assumed firms that did not submit timely responses were financially viable.

The 29 firms with timely responses comprised only about 35 percent of the industrial base production capacity. Of the 29 respondents, 19 were identified to be at financial risk. Secondary screenings that were done on these firms from an industrial base perspective disclosed that none were essential to the industrial base. Therefore, no detailed on-site reviews were conducted.

During its two surveys of ammunition producers, DOD assumed that nonresponding firms were financially viable. DOD said this was a reasonable assumption because the purpose of the survey was to identify firms that would exit the business without special DOD action. DOD stated

⁵A single source is one in which DOD acquires goods or services from only one producer. There may be other producers available. A sole source is one which DOD has identified as the only producer with the capability required to produce the goods or services.

⁶Although the deadline for submission of financial data was extended from March 15, 1995, to April 15, 1995, five firms still submitted data after the deadline. These five firms were not included in DOD's analysis.

that firms facing financial difficulties would be inclined to complete the financial viability surveys. Most of the firms that did not complete the survey were the smaller firms in the industry.

Assessment of the Adequacy of the Industrial Base Depends on Assumptions Used

If the key assumptions in the Defense Planning Guidance and DOD's industrial base studies are correct, the industrial base will be capable of simultaneously supplying peacetime ammunition needs and replenishing the ammunition stockpile as required, following one or two major regional conflicts. However, the ability of the industrial base to adequately respond to the military's replenishment requirements depends heavily on both the amount of ammunition that must be replenished and the time period over which the replenishment is to occur. Thus, if the response period is shortened, or if the required replenishment level is raised from that stated in current guidance, the industrial base may not be able to adequately respond to replenishment requirements.

The Army's annual functional area analyses help to illustrate the role replenishment levels and time frames play in assessments of the industrial base. The 1994 analysis painted a bleak picture of the industrial base's replenishment capability. However, in the 1995 analysis, the base's replenishment capability improved dramatically. While part of the improvement was due to increased funding, much of the improvement was caused by changes in the replenishment levels and time frames.

Army officials acknowledged that future changes in readiness requirements could affect their assessment of the industrial base's viability. In addition, they pointed out that once the existing industrial base is disposed of, there is a long time and a high cost involved in reestablishing it.

Non-DOD Studies Use More Pessimistic Assumptions to Assess the Adequacy of the Industrial Base

In addition to the DOD industrial base studies, several private organizations have studied the industrial base. However, most of the private studies have concluded that the industrial base is inadequate to meet the services' ammunition requirements. One such study was completed in June 1994 by the Committee for the Common Defense, the national security arm of the Alexis de Tocqueville Institution. The study concluded that the nation's ammunition industrial base was "rapidly-deteriorating." The report based this conclusion primarily on the Korean War experience, but it also

pointed out that the 323,000 tons of preferred munitions⁷ in the current U.S. stockpile represented less than the amount of ammunition sent to the Persian Gulf region in 1990 and 1991 for Operation Desert Storm.⁸ A private study conducted for the Munitions Industrial Base Task Force also found that the ammunition industrial base could not repeat the performance of Operations Desert Shield and Desert Storm. It stated that the industrial base could not support the demands of one major regional conflict, much less two simultaneously. However, the task force study assumed that the major regional conflicts would last 180 days, much longer than DOD's projected 60-120 days.

The private studies' conclusions about the industrial base differed from DOD's conclusions largely because of differences in the studies' methodologies and underlying assumptions. For example, the Munitions Industrial Base Task Force study used three scenarios to compute ammunition requirements: a global war, two major regional conflicts, and operations other than war. In contrast, DOD's ammunition requirements were established based on two major regional conflicts. Also, the private studies used information for 2 years, the budget year and the out-year, while DOD's studies took into account planned expenditures over its entire 5-year POM.

Agency Comments

DOD reviewed a draft of this report and provided written comments that concurred with the report. Some minor technical comments were received earlier and incorporated into the final report. DOD's comments are reprinted in appendix I.

Scope and Methodology

To determine the current status of the ammunition industrial base, we examined statistics the Army, as the single manager, had gathered and met with Army industrial readiness officials. Specifically, we reviewed industrial base trend data concerning the number of production facilities, the public/private mix of facilities, and the capacity of the production facilities.

To determine the industrial base's ability to meet current peacetime ammunition requirements, we met first with military officials to determine how requirements are established. Next, we obtained requirements data

⁷The report did not use substitute munitions in these calculations. However, the Army has stated that after using its preferred munitions it will rely on substitute munitions to meet any remaining requirements.

⁸Much of that ammunition was returned, unused at the conclusion of the war.

and stockpile levels and determined which items had shortages and which items had overages. (We relied on the data supplied by the services and did not physically verify the ammunition stockpile levels or trace requirements data back to the systems that generated the requirements.) Then, we randomly selected 152 ammunition items that had shortages and discussed these items with ammunition officials from the services. We also asked them to identify any additional items that had shortages due to industrial base problems. Finally, we investigated the causes of the industrial base shortages and the Army's plans to address these shortages, as the single manager for conventional ammunition.

To determine whether the industrial base could respond as required, after one or more major regional conflicts, we reviewed (1) the current Defense Planning Guidance, (2) the Army's 1992 strategy to maintain adequate ammunition facilities into the 21st century and an independent assessment of that strategy, (3) DOD's 1994 and 1995 financial viability assessments, and (4) reports from industry officials and other non-DOD sources that addressed the industrial base's ability to provide adequate ammunition during a national emergency. We identified the differences in underlying assumptions that caused wide differences in the reports' conclusions. DOD's Defense Planning Guidance contains several assumptions that are open to question. However, since that guidance establishes the framework for all military actions, not just ammunition procurements, we used those assumptions in forming our conclusions.

We conducted our review from July 1995 to March 1996 in accordance with generally accepted government auditing standards.

We are sending copies of this report to the Secretaries of Defense and each of the military services; the Commanding General, Army Materiel Command; the Commanding General, Army Industrial Operations Command; and other interested parties. We will also make copies available to others upon request.

Please contact me at (202) 512-5140 if you or your staffs have any questions concerning this report. Major contributors to this report are listed in appendix II.



Mark E. Gebicke
Director, Military Operations
and Capabilities Issues

Comments From the Department of Defense



ACQUISITION AND
TECHNOLOGY

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20 MAY 1996

Mr. Mark E. Gebicke
Director, Military Operations and
Capabilities Issues
National Security and International
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U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Gebicke:

This is the Department of Defense response to the General Accounting Office draft report, "AMMUNITION INDUSTRIAL BASE: Information on DOD's Assessment of Requirements," dated April 19, 1996 (GAO Code 703111/OSD Case 1131), and the classified draft letter dated April 26, 1996 (OSD Case 1131-AX). The Department has reviewed both drafts and concurs. A number of minor technical corrections were previously forwarded directly to the GAO staff for consideration.

The Department appreciates the opportunity to review and comment on the draft report and letter.

Sincerely,

A handwritten signature in ink, appearing to read "George R. Schneiter".

George R. Schneiter
Director
Strategic and Tactical Systems

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